

MULTIMETER



A digital multimeter

A multimeter or a multimeter, also known as a volt/ohm meter or VOM, is an electronic measuring instrument that combines several measurement functions in one unit. A typical multimeter may include features such as the ability to measure voltage, current and resistance. Multimeters may use analog or digital circuits— analog multimeters and digital multimeters (often abbreviated DMM or DVOM.) Analog instruments are usually based on a microammeter whose pointer moves over a scale calibration for all the different measurements that can be made; digital instruments usually display digits, but may display a bar of a length proportional to the quantity measured.

A multimeter can be a hand-held device useful for basic fault finding and field service work or a bench instrument which can measure to a very high degree of accuracy. They can be used to troubleshoot electrical problems in a wide array of industrial and household devices such as electronic equipment, motor controls, domestic appliances, power supplies, and wiring systems.

Quantities measured

Contemporary multimeters can measure many quantities. The common ones are:

- Voltage, alternating and direct, in volts.
- Current, alternating and direct, in amperes.

The frequency range for which AC measurements are accurate must be specified.

- Resistance in ohms.

Additionally, some multimeters measure:

- Capacitance in farads.
- Conductance in siemens.
- Decibels.
- Duty cycle as a percentage.

- Frequency in hertz.
- Inductance in henrys.
- Temperature in degrees Celsius or Fahrenheit, with an appropriate temperature test probe, often a thermocouple.

Digital multimeters may also include circuits for:

- Continuity; beeps when a circuit conducts.
- Diodes (measuring forward drop of diode junctions, i.e., diodes and transistor junctions) and transistors (measuring current gain and other parameters).
- Battery checking for simple 1.5 volt and 9 volt batteries. This is a current loaded voltage scale. Battery checking (ignoring internal resistance, which increases as the battery is depleted), is less accurate when using a DC voltage scale.

Source: <http://web.ua.es/docivis/magnet/multimeter.html>